-continued

(2) INFORMATION FOR SEQ ID NO:8:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 45 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY. linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:8:

```
Lys Ser Cys Cys Lys Ser Thr Leu Gly Arg Lys Cys Tyr Asn Leu Cys
 1               5                  10                  15

Lys Val Lys Gly Ala Lys Lys Leu Cys Ala Gly Val Cys Lys Cys Lys
            20                  25                  30

Leu Thr Ser Ser Gly Lys Cys Pro Lys Gly Phe Pro Lys
        35                  40                  45
```

(2) INFORMATION FOR SEQ ID NO:9:

(i) SEQUENCE CHARACTERISTICS:
(A) LENGTH: 45 amino acids
(B) TYPE: amino acid
(C) STRANDEDNESS: single
(D) TOPOLOGY: linear

(ii) MOLECULE TYPE: protein

(xi) SEQUENCE DESCRIPTION: SEQ ID NO:9:

```
Lys Xaa Cys Cys Xaa Ser Thr Leu Gly Xaa Xaa Xaa Tyr Asn Leu Cys
 1               5                  10                  15

Xaa Val Xaa Gly Ala Lys Xaa Leu Cys Ala Gly Val Xaa Xaa Cys Xaa
            20                  25                  30

Leu Thr Ser Ser Gly Xaa Cys Pro Thr Gly Phe Pro Xaa
        35                  40                  45
```

What is claimed is:

1. A protein having the sequence of SEQUENCE I.D. No. 1 wherein the amino acid residues at one or more of positions 5, 10, 11, 12, 17, 19, 22, 30 and 41 are lysine, and the remainder of the residues at those positions are the residues at the corresponding positions in SEQUENCE I.D. No. 1.

2. A protein according to claim 1 wherein one or more of the the amino acid residues at positions 5, 11, 12, 17, 19, 22 and 41 are lysine.

3. A protein according to claim 2 wherein all of the amino acid residues at positions 5, 11, 12, 17, 19, 22 and 41 are lysine.

4. A nucleotide sequence which codes for a protein according to claim 1.

5. An RNA sequence according to claim 4.

6. A DNA sequence according to claim 4.

7. An expression cassette containing the DNA sequence of claim 6 operably linked to plant regulatory sequences which cause the expression of the DNA sequence in plant cells.

8. A bacterial transformation vector comprising an expression cassette according to claim 7, operably linked to bacterial expression regulatory sequences which cause replication of the expression cassette in bacterial cells.

9. Bacterial cells containing as a foreign plasmid at least one copy of a bacterial transformation vector according to claim 8.

10. Transformed plant cells containing at least one copy of the expression cassette of claim 7.

11. Transformed cells according to claim 10, further characterized in being cells of a monocotyledonous species.

12. Transformed cells according to claim 11, further characterized in being maize, sorghum, wheat or rice cells.

13. Transformed cells according to claim 10, further characterized in being cells of a dicotyledonous species.

14. Transformed cells according to claim 13, further characterized in being soybean, alfalfa, rapeseed, sunflower, tobacco or tomato cells.

15. A maize cell or tissue culture comprising cells according to claim 12.

16. A transformed plant comprising transformed cells according to claim 10.

17. A method for killing and inhibiting plant pathogenic microorganisms which are susceptible to a-Hordothionin comprising introducing into the environment of the pathogenic microorganisms an antimicrobial amount of a protein according to claim 1.

18. A method for killing and inhibiting plant pathogens selected from *Fusarium graminearum, Fusarium moniliforme, Diplodia maydis, Colletototrichum graminicola, Verticillium alboatrum, Phytophthora megaspermae f.sp. glycinea, Macrophomina phaseolina, Diaporthe phaseolorum caulivora, Sclerotinia sclerotiorum, Sclerotinia trifoliorum*, and *Aspergillus flavus*, comprising introducing into the environment of the pathogenic microorganisms an antimicrobial amount of a protein according to claim 1.

19. A method according to claim 17 wherein the environment of the pathogen is the tissues of a living plant.

20. A method for enhancing the lysine content of a plant cell or seed comprising the step of causing a protein according to claim 1 to be expressed in the cell or seed.

21. A method for enhancing the lysine content of a plant comprising the step of causing a protein according to claim 1 to be expressed in tissues of the plant.

* * * * *